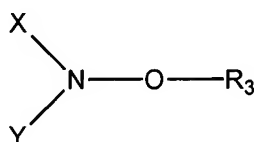


IN THE CLAIMS:

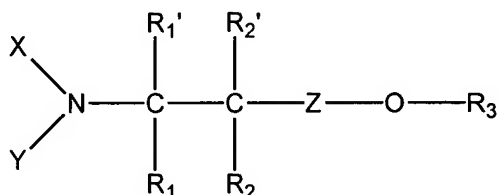
Claims 1-31 are amended in strikethrough-and-underline form below.

1. (Currently Amended) An aqueous semiconductor cleaning solution comprising:
at least about 75% by weight water;
from about 0.5% to about 10% by weight phosphoric acid;
at least one alkaline compound selected from the group consisting of: a quaternary ammonium hydroxide; a hydroxylamine derivative having the structural formula:



wherein R_3 is hydrogen or a linear, branched, or cyclic hydrocarbon containing from 1 to 7 carbon atoms; and wherein X and Y are, independently, hydrogen or a linear, branched, or cyclic hydrocarbon containing from 1 to 7 carbon atoms, or wherein X and Y are linked together form a nitrogen-containing heterocyclic C_4 - C_7 ring; and a mixture thereof; and

optionally one or more other acid compounds, optionally one or more fluoride-containing compounds, and/or optionally one or more alkanolamines having the structural formula:



wherein R_1 , R_1' , R_2 , R_2' , and R_3 are, independently in each case, hydrogen or a linear, branched, or cyclic hydrocarbon containing from 1 to 7 carbon atoms; wherein Z is a group having the formula $-(\text{Q}-\text{CR}_1\text{R}_1'-\text{CR}_2\text{R}_2')_m-$, such that m is a whole number from 0 to 3 (*i.e.*, when $m=0$, there is no atom between the $-\text{CR}_2\text{R}_2'$ - group and the $-\text{OR}_3$ group in the formula above), R_1 , R_1' , R_2 , and R_2' may be independently defined in each repeat unit, if $m>1$, within the parameters set forth for these moieties above, and Q may be independently defined in each repeat unit, if $m>1$, each Q being independently either -O- or $-\text{NR}_3-$; and wherein X and Y are, independently in each case, hydrogen, a C_1 - C_7 linear, branched, or cyclic hydrocarbon, or a group having the formula $-\text{CR}_1\text{R}_1'-\text{CR}_2\text{R}_2'-\text{Z}-\text{F}$, with F being either $-\text{O}-\text{R}_3$ or $-\text{NR}_3\text{R}_4$, where R_4

is defined similarly to R₁, R₁', R₂, R₂', and R₃ above, and with Z, R₁, R₁', R₂, R₂', and R₃ defined as above, or wherein X and Y are linked together form a nitrogen-containing heterocyclic C₄-C₇ ring.

2. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the pH of the solution is between about 2 and about 6.

3. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the at least one alkaline component comprises a hydroxylamine derivative present in an amount from about 0.3% to about 1% by weight.

4. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the at least one alkaline component comprises hydroxylamine or N,N-diethylhydroxylamine.

5. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the at least one alkaline component comprises a quaternary ammonium compound present in an amount from about 0.5% to about 3% by weight.

6. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the at least one alkaline component comprises choline hydroxide.

7. (Original) The aqueous semiconductor cleaning solution of claim 1, which comprises one or more other acid compounds selected from the group consisting of hydrochloric acid, nitric acid, periodic acid, pyrophosphoric acid, fluorosilicic acid, sulfuric acid, methanesulfonic acid, oxalic acid, lactic acid, citric acid, xylenesulfonic acid, toluenesulfonic acid, formic acid, tartaric acid, propionic acid, benzoic acid, ascorbic acid, gluconic acid, malic acid, malonic acid, succinic acid, gallic acid, butyric acid, trifluoroacetic acid, and mixtures thereof.

8. (Original) The aqueous semiconductor cleaning solution of claim 7, wherein the one or more other acid compounds is glycolic acid, methanesulfonic acid, pyrophosphoric acid, oxalic acid, lactic acid, or citric acid.

9. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the one or more other acids are present in an amount from about 0.2% to about 5% by weight.

10. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the one or more fluorine-containing compounds are present in an amount from about 0.01% to about 0.1% by weight.

11. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the one or more fluorine-containing compounds comprise ammonium bifluoride and/or ammonium fluoride.

12. (Original) The aqueous semiconductor cleaning solution of claim 1, further comprising an organic solvent in an amount from about 5% to about 15% by weight.

13. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the organic solvent comprises an organic acid ester.

14. (Original) The aqueous semiconductor cleaning solution of claim 1, further comprising a surfactant.

15. (Original) The aqueous semiconductor cleaning solution of claim 1, further comprising one or more alkanolamines selected from the group consisting of monoethanolamine, 2-(2-hydroxyethylamino)ethanol, 2-(2-aminoethoxy)ethanol, N,N,N-tris(2-hydroxyethyl)-ammonia, isopropanolamine, 3-amino-1-propanol, 2-amino-1-propanol, 2-(N-methylamino)ethanol, 2-(2-aminoethylamino)ethanol, and mixtures thereof.

16. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the one or more alkanolamines is present in an amount from about 0.5% to about 5% by weight.

17. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the solution is substantially free from other acid compounds.

18. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the solution is substantially free from fluoride-containing compounds.

19. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the solution is substantially free from alkanolamines.

20. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the solution contains substantially no additional components.

21. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the solution is substantially free from hydroxylamine derivatives.

22. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the solution is substantially free from organic solvents.

23. (Original) The aqueous semiconductor cleaning solution of claim 1, wherein the concentration of water is at least about 85% by weight.

24. (Currently Amended) A dilute aqueous cleaner and residue remover comprising:
water, optionally in a mixture with one or more polar organic solvents, wherein the water is present in an amount of at least about 75% by weight;

phosphoric acid or salt thereof, present in an amount from about 0.1% to about 6% by weight of 85% phosphoric acid;

optionally, a quaternary ammonium compound, present in the solution in an amount from about 0.2% to about 5% by weight;

~~optionally,~~ hydroxylamine or a hydroxylamine derivative, present in the solution in an amount from about 0.1% to about 5% by weight not including the counterion of the hydroxylamine derivative salt, if present;

optionally, an alkanolamine, present in the solution in an amount from about 0.2% to about 5% by weight;

optionally, a fluoride-containing compound, present in the solution in an amount from about 0.001% to about 0.5% by weight;

optionally, an other acid compound, present in the solution in an amount from about 0.05% to about 6% by weight;

optionally, a chelating agent, present in the solution in an amount from about 0.1% to about 8% by weight; and

optionally, a surfactant, present in the solution in an amount from about 0.01% to about 3% by weight.

25. (Currently Amended) A dilute aqueous cleaner and residue remover consisting essentially of: about 1.5% to about 2.5% by weight of phosphoric acid; about 0.5% to about 1% by weight of a hydroxylamine or hydroxylamine derivative, ~~preferably hydroxylamine~~; and about 0.005% to about 0.04% by weight of a fluoride-containing compound, ~~preferably ammonium bifluoride~~.

26. (Original) A dilute aqueous cleaner and residue remover consisting essentially of: about 1.5% to about 2.5% by weight of phosphoric acid; about 0.5% to about 1% by weight of a hydroxylamine derivative; about 0.005% to about 0.04% by weight of a fluoride-containing compound; and about 0.05% to about 0.2% by weight of a surfactant.

27. (Currently Amended) A dilute aqueous cleaner and residue remover consisting essentially of: about 1.5% to about 2.5% by weight of phosphoric acid; about 0.5% to about 1% by weight of a hydroxylamine or hydroxylamine derivative, ~~preferably hydroxylamine~~; and about 0.005% to about 0.1% by weight of a fluoride-containing compound, ~~preferably ammonium fluoride~~.

28. (Original) A dilute aqueous cleaner and residue remover consisting essentially of: about 1.5% to about 2.5% by weight of phosphoric acid; about 0.5% to about 1% by weight of a hydroxylamine derivative; about 0.005% to about 0.1% by weight of a fluoride-containing compound; and about 5% to about 15% by weight of a polar organic solvent.

29. (Original) A dilute aqueous cleaner and residue remover consisting essentially of: about 1.5% to about 2.5% by weight of phosphoric acid; and about 0.5% to about 1.5% by weight of a quaternary ammonium salt.

30. (Currently amended) A dilute aqueous cleaner and residue remover consisting essentially of: about 1.5% to about 4% by weight of 85% phosphoric acid; about 0.3% to about 4% by weight of oxalic acid dihydrate; about 0.3% to about 4% by weight of a monofunctional organic acid; about 90% to about 99% by weight of water; and optionally between about 0.1% and about 1% of a chelator, wherein the formulation contains substantially no organic solvents and no compounds listed as SARA 3 hazardous compounds on the filing date of this application.

31. (Currently Amended) A dilute aqueous cleaner and residue remover consisting essentially of: ~~optionally~~ about 0.5% to about 6% by weight of 85% phosphoric acid; about 2% to about 12% by weight of oxalic acid dihydrate; optionally about 0.2% to about 15% by weight of a monofunctional organic acid; optionally between about 0.05% and 1.5% by weight of: ammonium hydroxide, an alkyl ammonium hydroxide substituted with 2 or 3 alkyl moieties independently selected from methyl and ethyl moieties, or a mixture thereof; optionally between about 0.1% and about 1% of a chelator; and water, wherein the formulation contains substantially no organic solvents and no compounds listed as SARA 3 hazardous compounds on the filing date of this application.